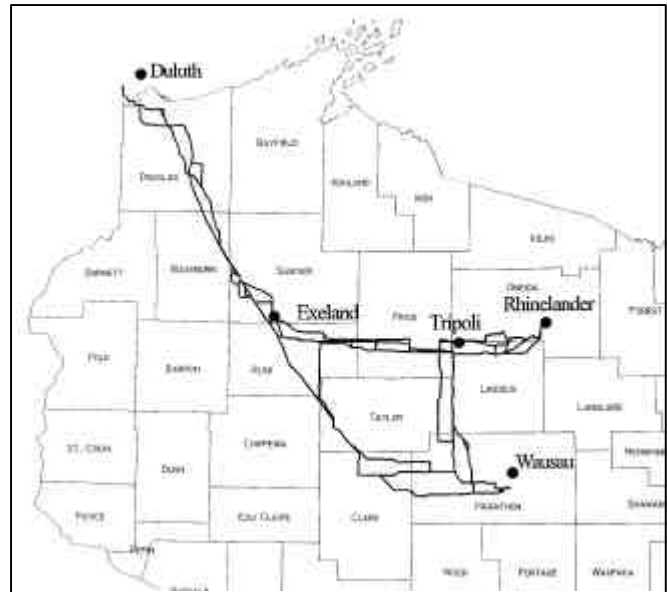


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Appendix A - Agricultural Impact Statement Executive Summary

The Wisconsin Public Service Corporation (WPSC) of Green Bay and Minnesota Power (MP) of Duluth are proposing to construct and maintain a 250-mile long, 345 kilovolt (kV) transmission line between Wausau and Duluth. WPSC may also construct a 115 kV transmission line between Tripoli and Rhineland as part of the proposed project. Before the acquisition of right-of-way or construction could begin, the Public Service Commission of Wisconsin, as well as agencies in Minnesota, must approve these transmission lines.

The 345 kV line would begin at the Weston Substation south of Wausau in Marathon County. It would follow one of two general corridors. The first proceeds north through Lincoln, Taylor, Oneida, and Price Counties to a new substation near Tripoli and then west through Price and Rusk Counties to the Exeland Substation near Ladysmith. From there, it continues in a northwestern direction to the Oliver Substation near Superior. The second corridor would proceed west and north from Weston via Owen/Withee through Clark, Taylor, and Rusk Counties to the Exeland Substation. It would then head to the northwest through Sawyer, Washburn, and Douglas Counties to the substation at Oliver southwest of Superior. After passing the Oliver Substation, the proposed line would continue into Minnesota and end at the Arrowhead Substation near Duluth. There are three alternative routes between Weston and Tripoli, three alternative routes between Weston and Exeland via Owen/Withee, and three alternative routes between Exeland and Oliver.



If any of the routes via Tripoli were selected, the project could also include the construction of a 115 kV line. The 115 kV line would extend from a new substation at Tripoli to the existing

Highway 8 Substation in Rhinelander. There are three alternative routes for this portion of the project. It is important to note that there is no proposal to extend the 115 kV line west or south of Tripoli. Therefore, if the Wisconsin Public Service Commission approves the 345 kV line, but chooses one of the routes through the Owen/Withee area, the 115 kV portion of the project would no longer be feasible since it could not connect to the 345 kV line.

Project Need

WPSC and MP have proposed this project in order to improve the reliability and increase the capacity of the electric power grid in northern Wisconsin. The 115 kV line was proposed to provide additional power to the Rhinelander area. Currently, there is only one 345 kV transmission line connecting northern Wisconsin and Minnesota. WPSC and MP have indicated that the construction of new power generation plants would not improve the reliability of the electric power grid in northwestern Wisconsin. The utilities also indicated that increased conservation or the use of alternative power production would not improve the deficiencies in the existing power supply grid.

County Background

Eleven counties in northwestern Wisconsin could be affected by this project. As a whole, these counties have 14.1 percent of the state's farms and 14.2 percent of its farmland. Forestland in this region represents 30.9 percent of the state's total forestland. Over the past fifteen years, the number of farms in the region has declined by 12 percent and the amount of land in farms has declined by 11.6 percent. This is greater than the statewide average declines of 9.7 and 9.9 percent, respectively.

In 1998, the eleven counties affected by the proposed project produced 15.5 percent of all the milk produced in Wisconsin. Marathon and Clark Counties ranked first and second respectively among all of Wisconsin's 72 counties in the production of milk. One reason for the large amount of milk production is the concentration of prime farmland in these two counties. Milk production is dependent on the availability of high quality forage and grain, which can be easily grown on prime farmland. The region accounted for 14.3 percent of the state's forage production. Marathon County ranked second in the state for forage production and Clark County ranked sixth. Taylor and Rusk Counties ranked third and fourth respectively in the production of non-alfalfa hay. Marathon County was the leading producer of ginseng with significant ginseng production also found in Lincoln County. Although Oneida County does not have a significant amount of cropland compared to other counties, its proportion of cropland that is irrigated is much higher than in other counties, 15.1 percent compared to 3.3 percent statewide.

Due to the climate and soils, forestry contributes more to the economy of many of these counties than does traditional agriculture. Forests comprise over 70 percent of the land area in six of the region's counties: Sawyer, Oneida, Douglas, Price, Washburn, and Lincoln Counties.

Overview of routes

If the proposed project is approved, it will affect farmland and forestland in the region. All of the potential routes between Weston and Exeland would affect land in Marathon and Rusk Counties. Although the project would primarily affect dairy operations in Marathon County, it would also affect some ginseng operations.

Routes 1.1, 1.2, and 1.3 pass through significant amounts of forestland as they head north into Taylor and Lincoln Counties. As these routes turn west at Tripoli and pass through Price County, they pass through agricultural and forestland. The farms in this area include dairy, beef, and Christmas tree operations.

Routes 2.1, 2.2, and 2.3, which head west and north from Weston through Clark, Taylor and Chippewa Counties, would affect agricultural land used for dairy, beef, and Christmas tree production as well as smaller amounts of forestland. In Rusk County, the routes that extend from the southeast through Owen/Withee appear to affect more dairy and beef operations than those from Tripoli in the east, which cross a greater concentration of forestland.

From Exeland north to Oliver, Routes 3.1, 3.2, and 3.3 mostly affect forestland. However, they do pass through agricultural areas in all three counties: Sawyer, Washburn, and Douglas. Dairy and beef are the most common operations in the area, especially in Sawyer County. However, cranberry production in Washburn and Douglas Counties may also be affected.

The 115 kV line between Tripoli and Rhinelander passes mostly through Oneida and Lincoln Counties with the far western portion of the line located in Price County. Most of these routes pass through forestland with scattered agricultural production. However, there are more farms and some irrigated land southwest of Rhinelander that could be affected by the project.

Property acquisition

If the Wisconsin Public Service Commissioners approve the project, they will also select the route that will be followed. WPSC and MP will then begin acquiring right-of-way easements. The proposed 345 kV project will require a 150-foot wide easement where H-frame support structures are used and a 120-foot wide right-of-way where single pole structures are used. In locations where the line will incorporate rights-of-way from existing power lines, pipelines, railroads, and roads, the required width of the new right-of-way will be less. In general, the right-of-way width for the 115 kV line will be 80 feet and would be less where existing rights-of-way are utilized.

Most of the support structures used for the 345 kV line will be H-frames or single poles. Farming would be permitted within the right-of-way easement and equipment can be operated under the line if this equipment does not exceed 15 to 17 feet in height. Christmas tree production will also be permitted as long as the trees are less than 12 feet tall. Trees grown for timber or pulpwood would not be permitted within the right-of-way for the transmission line.

Acquisition process

If the project is approved, the utilities will begin the acquisition process by appraising the needed right-of-way and using those appraisals to negotiate the compensation paid to landowners. Landowners' rights in the negotiation process are spelled out in state statutes. The "Landowners' Bill of Rights" is found in §182.017 of the *Wisconsin Statutes*, which is included in Appendix 4 of the AIS.

After the easements are acquired, the utilities will clear the right-of-way, install the support structures, and string the lines. When temporary access for maintenance is needed, the utilities will notify landowners in advance. Landowner contacts will be made following emergency repairs.

Landowner Comments

DATCP received letters from over 830 individuals, families, and local governments who are opposed to the proposed project. The most frequently cited concerns include the following. They are not listed in any particular order.

- Effects on human and animal health
- Stray voltage on dairy farms
- Reduced property values, which lower landowners' equity and reduce property tax revenue for schools and local governments
- Aesthetics including changes in scenery and noise from the power line
- Loss of farmland and forestland
- Difficulty of farming around transmission line support structures
- Lack of benefits for those who will have the line on their property

Appendix 2 of the AIS contains a table listing individuals who contacted the DATCP in opposition to the project.

Many of the landowners that are potentially affected by this project are very concerned about stray voltage. Since transmission lines are not directly connected to distribution lines, but rather are connected to substations and power plants, transmission lines are not typically associated with stray voltage problems on farms or on distributions lines. However, when distribution lines are underbuilt on transmission line structures, stray voltage may occur. Underbuilt means that a lower-voltage distribution line is strung beneath a higher-voltage transmission line on the same support structures. There are four segments in Price and Rusk Counties where 115 kV lines would be used to connect the relocated Northern States Power lines to substations. Northern States Power is an electric utility, not directly involved in the proposed project, serving parts of northwestern Wisconsin. These 115 kV lines would have underbuilt distribution lines, which can increase the risk of stray voltage on the distribution lines. Stray voltage can cause behavior and health problems in dairy cows that can lead to lower milk production.

Many landowners are concerned that power lines will lower their property values and reduce the property tax revenue for schools and local governments. However, this effect varies with the size and use of the parcel. In general, smaller parcels see proportionately larger negative effects than larger ones. In some cases the effect can be positive if the transmission line right-of-way improves access or is attractively landscaped.

WPSC and MP will purchase or relocate any homes that are within 50 feet from either side of the transmission line right-of-way. This 100-foot strip is not from the edge of the right-of-way. Therefore, a home within the right-of-way that is more than 50 feet from the right-of-way centerline would not be purchased or relocated. DATCP is recommending that this policy include any agricultural buildings within 50 feet of the right-of-way centerline that have metal frames, roofs, or walls.

Another concern frequently mentioned by opponents of the line is the effect of electromagnetic fields (EMF) on human and animal health. These fields are produced whenever there is electric current such as in appliances, home wiring, and power lines. Studies conducted to date have not shown conclusively whether EMF is a health risk for humans or animals.

Some of the projects potential impacts may not be wide spread, but can be significant to those people affected. For example, transmission lines may interfere with the use of devices that rely on radio waves, such as cell phones and global positioning systems (GPS).

The agricultural impact statement for this proposed project includes information about these issues and makes recommendations to the utilities for the mitigation of many of these impacts. The Draft Environmental Impact Statement will discuss in more detail many of the health concerns.

Overview of Potential Agricultural Impacts

Unless care is used, construction of transmission lines will compact soil in the right-of-way. Soil compaction often leads to lower crop yields in the affected area because of reduced pore space between soil particles. Smaller pores in the soil reduce the amount of water and nutrients available to plant roots, which ultimately reduces crop yields. Construction crews can reduce the amount of soil compaction by working when the ground is frozen, avoiding work when the ground is wet, using equipment with more tires and wider tires to distribute the weight of the vehicle, and tilling the severely compacted areas after construction is completed.

The size of an easement does not necessarily reflect the amount of cropland that will no longer be available for farming. This is because farmers can continue to work land under the transmission line. However, transmission line support structures in fields frequently become obstacles to cropping the land and farmers may be forced to change their cropping patterns or leave some land idle.

Since the right-of-way must be kept clear, a transmission line easement through a forested tract of land will open a corridor in that forest eliminating the continuity of the tract. Access for

human use as well as for animal and plant species that need openings in the woods will be improved. However, a cleared right-of-way would be a detriment to species that need large tracts of unbroken forests.

Safety is a critical issue for farmers and anyone else working around transmission lines. Direct contact between a power line and an object on the ground can cause severe injury or death to a person in contact with that object. Injuries or death will also occur if an object on the ground comes near enough to a power line to cause arcing. Arcing is a discharge of electric current across a gap. Farm machinery can be operated under a 345 kV transmission line without risk of arcing if the equipment (or anything touching it) does not exceed 15 to 17 feet above the ground.

The full AIS discusses the effects that transmission lines can have on farms and forestland. It also makes recommendations that are intended to aid the utilities and landowners in identifying potential problems associated with this project and mitigating their impacts.